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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,208	03/27/2001	Eliot M. Case	1815 (USW 0621 PUS)	2486

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QWEST COMMUNICATIONS INTERNATIONAL INC  
LAW DEPT INTELLECTUAL PROPERTY GROUP  
1801 CALIFORNIA STREET, SUITE 3800  
DENVER, CO 80202

EXAMINER
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WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
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2655

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DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

*Rm*

**Office Action Summary**

Application No.

09/818,208

Applicant(s)

CASE, ELIOT M.

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02/27/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13, 17 is/are rejected.
- 7) ☒ Claim(s) 11, 12, 14-16, and 18-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/27/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**Detailed Action**

***Response to Amendment***

1. In response to the office action from 12/01/03, the applicant has submitted an amendment, filed 2/27/04, arguing to traverse the art rejection based on the limitation regarding “manipulating the starting and ending sonic features to determine first and second switch points” and “synchronizing first and second recording switch points” (*Amendment, Page 3*). Applicant's arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.

***Response to Arguments***

2. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

- With respect to **Claim 1**, the applicant states that “Campbell fails to describe or suggest manipulating the starting and ending sonic features to determine first and second switch points, or synchronizing first and second recording switch points,” (*Amendment, Page 3*) however, Campbell teaches the means for weighting speech features (manipulation of acoustic features) to determine a phoneme starting point and duration for concatenation (*Col. 10, Line 66- Col. 11, Line 11*). Therefore, selecting a best phoneme featuring a starting and ending (phoneme duration) point

that will minimize concatenation costs, determined through the application of a weighting factor, provides a starting and ending acoustic feature for fading one phoneme into the next in a concatenation process to produce more natural synthesized speech, since the selected features will be a minimum distance apart and thus acoustically similar. Synchronizing switch points is provided by phoneme alignment, which utilizes the start and end points of each phoneme in aligning phonemes for concatenation (*Col. 6, Lines 54-59*). Thus, phonemes are aligned using selected switch points in the form of phoneme start and end points. Also, the applicant states that Campbell “simply performs speech analysis of a speech waveform database,” (Amendment, Page 3), however, the method disclosed by Campbell is utilized in concatenating phonemes for speech synthesis (*Col. 1, Field of the Invention*), as can be seen in Fig. 1.

- With respect to **Claims 9, 10, 13, and 17**, the applicant argues that Campbell fails to describe “any of more detailed features of synchronizing first and second recording switch points” (Amendment, 4), however the applicant does not argue the specific details Campbell fails to teach. Thus, the rejection below in regards to the aforementioned claims is believed to be a sufficient response to these arguments.

Therefore, the below rejection is maintained without any additional prior art:

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-8** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent: 6,366,883 to Campbell et al.

With respect to **Claim 1**, Campbell suggests:

A method for converting text to concatenated voice (*speech synthesizing means for concatenating speech waveform signals, Col. 2, Lines 50-58*) by utilizing a digital voice library (*speech waveform database, Fig. 1, Element 21*) and a set of playback rules (*phoneme sequence based on dictionary and rules, Col. 8, Lines 24-25*).

The digital voice library including a plurality of voice recordings with each recording having a starting sonic feature and an ending sonic feature (*speech waveform signals (from the database) starting and ending points determined by prosodic and acoustic characteristics of each phoneme, Col. 6, Lines 54-66*).

The method including receiving text data (*Fig. 4, Step S11*), converting the text data into a sequence of voice recordings (*Fig. 7*) in accordance with the digital voice library (*speech analyzer utilizing a speech waveform database in the process of creating a synthesized speech*

*sequence, Col. 4, Lines 43-48) and the set of playback rules (phoneme sequence based on dictionary and rules, Col. 8, Lines 24-25).*

The method further comprising: generating voice data based on the sequence of voice recordings by concatenating adjacent recordings in the sequence of voice recordings (*speech synthesizing means for concatenating speech waveform signals, Col. 2, Lines 50-58*).

Wherein concatenating a first recording and a second recording adjacent to the first recording includes manipulating the ending sonic feature of the first recording to determine a first recording switch point, manipulating the starting sonic feature of the second recording to determine a second recording switch point, and synchronizing the first recording switch point and the second recording switch point (*method of measuring acoustic characteristics and determining start and end points of each phoneme in the phoneme alignment process, Col. 6, Lines 54-59*).

With respect to **Claim 2**, Campbell discloses:

The method of claim 1 wherein the starting and ending sonic features of the voice recordings are classified into a number of different categories (*multiple phoneme acoustic feature types, Col. 6, Line 61-Col.7, Line 3, and Table 1*).

With respect to **Claim 3**, Campbell suggests:

The method of claim 2, wherein one of the categories is a noise (*unvoiced discriminative acoustic characteristic of a phoneme, Table 1*).

With respect to **Claim 4**, Campbell suggests:

The method of claim 2 wherein one of the categories is an impulse (*sharp discriminative acoustic characteristic of a phoneme, Table 1*).

With respect to **Claim 5**, Campbell suggests:

The method of claim 2 wherein one of the categories is a tone (*voiced discriminative acoustic characteristic of a phoneme, Table 1*).

With respect to **Claim 6**, Campbell suggests:

The method of claim 2 wherein the first recording switch point is selected based on the classification of the ending sonic feature of the first recording (*start position and speech unit duration used in the concatenation of speech waveform signals; end position of the first waveform can be determined via the speech unit duration and intuitively selected as the starting point for the next speech waveform, Col. 11, Lines 6-11*).

With respect to **Claim 7**, Campbell discloses:

The method of claim 6 wherein the second recording switch point is selected based on the classification of the starting sonic feature of the second recording (*prosodic feature parameters used for speech unit selection in the concatenation process, Col. 11, Lines 41-44*).

With respect to **Claim 8**, Campbell suggests:

The method of claim 1 wherein the starting and ending sonic features of the voice recordings are classified into a number of different categories including a noise, an impulse, and a tone (*unvoiced, sharp, and voiced discriminative acoustic characteristics of a phoneme, Table 1*).

Thus, Campbell anticipates the invention as recited in **Claims 1-8**.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9, 10, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell.

With respect to **Claim 9**, Campbell suggests:

The method of claim 8 wherein the ending sonic feature of the first recording is an impulse and the starting sonic feature of the second recording is an impulse (*sharp acoustic characteristic, Table 1*), and

Wherein synchronizing the first recording switch point and the second recording switch point further comprises: synchronizing the impulses, and switching to and playing back the impulse and remainder of the second recording (*method of measuring acoustic characteristics and determining start and end points of each phoneme in the phoneme alignment process, Col. 6, Lines 54-59; It would be obvious to play the impulse, which is part of the phoneme file, as well as the remainder of the second phoneme since the playback of the entire second file would be necessary to fully appreciate concatenated speech*).

With respect to **Claim 10**, Campbell suggests:



The method of claim 8 wherein the ending sonic feature of the first recording is a tone and the starting sonic feature of the second recording is a tone (*voiced acoustic characteristic, Table 1*), and

Wherein synchronizing the first recording switch point and the second recording switch point further comprises: synchronizing the tones, and switching on peaks of the tones (*method of measuring acoustic characteristics and determining start and end points of each phoneme in the phoneme alignment process, Col. 6, Lines 54-59; It would be obvious to align the phonemes on the tone peaks since those peaks are associated with the beginning and ending of each phoneme, thus the tone peaks would be aligned as the phonemes are concatenated*).

With respect to **Claims 13 and 17**, Campbell suggests:

The method of claim 8 wherein the ending sonic feature of the first recording is a tone or an impulse and the starting sonic feature of the second recording is an impulse or a tone (*sharp or voiced acoustic characteristic, Table 1*), and

Wherein synchronizing the first recording switch point and the second recording switch point further comprises: switching on a peak of the tone and on an impulse of the impulse (*method of measuring acoustic characteristics and determining start and end points of each phoneme in the phoneme alignment process, Col. 6, Lines 54-59; It would be obvious to align the phonemes on the tone peaks and impulses since the peaks and impulses are associated with the beginning and ending of each phoneme, thus the tone peaks would be aligned as the phonemes are concatenated*).

***Allowable Subject Matter***

7. **Claims 11, 12, 14-16, and 18-20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Prior art does not teach:

- Recording overlap and a synchronization process in which multiplexing is utilized as recited in **Claims 11, 14, and 18**.

A switch point anywhere within the noise such that not more than fifty percent of duration of either noise is cut as recited in **Claims 12, 15, 16, 19, and 20**.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

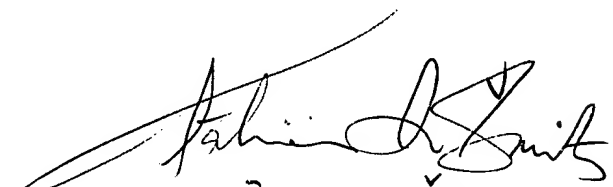
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (703) 305-8669 and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached at (703) 306-3011. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak  
3/31/04



TĀLIVALDIS IVARS SMITS  
PRIMARY EXAMINER